



REMARKS

Reconsideration and the timely allowance of the pending claims, in view of the following remarks, are respectfully requested.

By this Amendment, no claims are amended, cancelled or added. Accordingly, after entry of this Amendment, claims 26-29, 31-40 and 42-45 will remain pending in the patent application.

As a preliminary matter, Applicants would like to express appreciation for the courtesies extended by Examiner Alejandro to Applicants' representative during the interview conducted on September 19, 2006 (hereinafter the "Interview"). The substance of the interview is incorporated into the remarks below and constitutes Applicants' record of the interview.

The Examiner rejected claims 26, 28-29, 37, 39-40, and 44-45, under 35 U.S.C. §103(a), as allegedly being unpatentable over Li '771 (US Patent No. 5,772,771); claims 27 and 38 were rejected, under 35 U.S.C. § 103(a), as allegedly being unpatentable over Li '771 in view of Tomoyasu '103 (U.S. Pat. No. 5,900,103); and claims 26-29, 31-32, 37-40, and 42-45 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tei '215 (U.S. Patent Pub. No. 2002/0011215) in view of Tomoyasu '103 and Li '771.

Claim 26 recites a plasma processing apparatus for applying a plasma process to an object to be processed, wherein, *inter alia*, "the gas introducing ring forms an annular passage to distribute the gas to a plurality of gas nozzles facing inside said process chamber, the gas introducing ring including an inlet port opening to the annular passage and connected to said gas supply line so as to supply the gas to the annular passage; and an outlet port opening to the annular passage and connected to said gas exhaust line, the outlet port opening at a position different from a position at which the inlet port opens." As explained during the Interview, Li '771 does not disclose, teach or suggest these features.

Li '771 discloses a deposition chamber 2 including a housing 4 defining a chamber 18 which houses a substrate support 14. (*See, e.g.*, FIG. 1 of Li '771). A processing gas is provided to manifold 36 (interpreted by the Examiner during the interview as "the gas introducing ring" of claim 26) at opposite sides of the manifold to disperse gas through a plurality of nozzles 34 within the chamber 18. *Id.* The processing gas is supplied to manifold 36 via a pair of gas feed lines 70, 72, which are coupled to a common gas feed line

80. (*See, e.g.*, col. 4, lines 16-24 and FIG. 4 of Li '771). Li '771 further discloses that, during cleaning operations, the common gas feed line 80 (interpreted by the Office Action as “the inlet port” of claim 26) is coupled to a cleaning gas line 82 (interpreted by the Office Action as “the outlet port” of claim 26) via a shutoff valve 88 and ultimately to a vacuum pump 84 to exhaust the gases via line 82. (*See, e.g.*, col. 4, lines 38-54 and FIG. 5 of Li '771).

However, unlike claim 26, Li '771 fails to teach or suggest that the outlet port, which is connected to the gas exhaust line, opens directly into the annular passage at a position different from a position at which the inlet port opens, as required by claim 26. That is, if cleaning gas line 82 is construed as being equivalent to the claimed gas exhaust line, as asserted by the Examiner, cleaning gas line 82 never directly opens up to manifold 36, as required by the claim language. Rather, the architecture disclosed clearly shows that the cleaning gas line 82 is connected to common gas feed line 80. (*See* FIG. 5).

The Examiner indicated during the Interview that cleaning gas line 82 indirectly opens up to manifold 36 via gas supply line 80. However, even assuming this was the case, which Applicants do not concede, claim 26 cannot be rendered obvious by Li '771 because, under the Examiner’s interpretation and unlike claim 26, the cleaning gas line 82 of Li '771 (interpreted by the Office Action as “the outlet port” of claim 26) would open up to manifold 36 at the same position as the common gas feed line 80 (interpreted by the Office Action as “the inlet port” of claim 26). This is different from the apparatus of claim 26 which requires that the outlet port opens at a position different from a position at which the inlet port opens. Thus, by virtue of teaching that the cleaning gas line 82 is coupled to the common gas feed line 80 and the common gas feed line 80 is the only line that opens up to the manifold 36, Li '771 teaches away from a gas introducing ring wherein an outlet port opens at a position different from a position at which the inlet port opens. Accordingly, claim 26 cannot be rendered obvious based on Li '771.

Applicants respectfully submit that none of the other references applied to claim 26 are capable of curing the defects of Li '771 noted above. Indeed, none of the other references, including Tei '215 and Tomoyasu '103, teach a configuration in which the gas introducing ring includes an inlet port opening to the annular passage and connected to said gas supply line so as to supply the gas to the annular passage; and an outlet port opening to

the annular passage and connected to said gas exhaust line, the outlet port opening at a position different from a position at which the inlet port opens, as required by claim 26.

Claims 27-29 and 31-32 are patentable over Li '771, Tei '215, Tomoyasu '103 and a combination thereof at least by virtue of their dependency from claim 26 and for the additional features recited therein.

Claim 37 is patentable over Li '771, Tei '215, Tomoyasu '103 and a combination thereof for at least the same reasons as provided above in claim 26 and for the additional features recited therein. Namely, claim 37 is patentable over Li '771, Tei '215, and Tomoyasu '103 at least because this claim recites a plasma processing apparatus for applying a plasma process to an object to be processed wherein, *inter alia*, the gas introducing ring forms an annular passage to distribute the gas to a plurality of gas nozzles facing inside said process chamber, the gas introducing ring including an inlet port opening to the annular passage and connected to said gas supply line so as to supply the gas to the annular passage; and an outlet port opening to the annular passage and connected to said bypass line, the outlet port opening at a position different from a position at which the inlet port opens. As mentioned previously, Li '771, Tei '215, Tomoyasu '103 do not disclose, teach or suggest these features.

Claims 38-40 and 42-43 are patentable over Li '771, Tei '215, Tomoyasu '103 at least by virtue of their dependencies from claim 37 and for the additional features recited therein.

Claim 44 is patentable over Li '771, Tei '215, Tomoyasu '103 for at least the same reasons as provided above in claim 26 and for the additional features recited therein. Namely, claim 44 is patentable over Li '771, Tei '215, Tomoyasu '103 at least because this claim recites a plasma processing apparatus for applying a plasma process to an object to be processed, wherein, *inter alia*, the gas introducing ring forms an annular passage to distribute the reactant gas to a plurality of gas nozzles facing inside said process chamber, the gas introducing ring including an inlet port opening to the annular passage and connected to said gas supply line so as to supply the reactant gas to the annular passage; and an outlet port opening to the annular passage and connected to said gas exhaust line, the outlet port opening at a position different from a position at which the inlet port opens. As mentioned previously, Li '771, Tei '215, Tomoyasu '103 do not disclose, teach or suggest these features.

Claim 44 is patentable over Li '771, Tei '215, Tomoyasu '103 at least by virtue of its dependency from claim 45 and for the additional features recited therein.

Accordingly, reconsideration and withdrawal of the rejections of claims 26, 28-29, 37, 39-40, and 44-45, under 35 USC §103(a) based on Li '771, claims 27 and 38 under 35 U.S.C. § 103(a) based on Li '771 in view of Tomoyasu '103, and claims 26-29, 31-32, 37-40, and 42-45 under 35 U.S.C. § 103(a) based on Tei '215 in view of Tomoyasu '103 and Li '771 are respectfully requested.

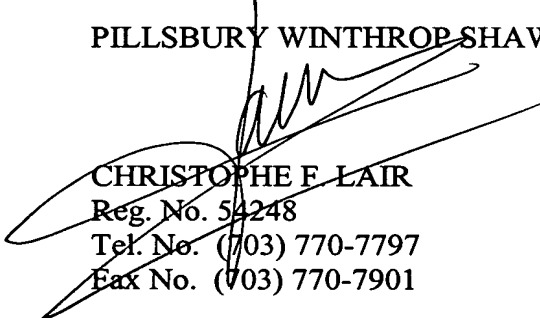
All matters having been addressed and in view of the foregoing, Applicants respectfully request the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of all pending claims.

Applicants' Counsel remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter. Please charge any fees associated with the submission of this paper to Deposit Account Number 033975, Order No. 040258-0279274.

The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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